

Amendments to the Specification

Please amend the title of the invention as follows:

METHOD FOR RUNNING A TUFTING MACHINE

Please replace the paragraph that begins at line 16 on page 1 with the following amended paragraph:

The pick-up of yarn off of the needle, due to a looper or hook is a critical part of a tufting action which is best achieved slightly after the needle has passed BDC. Halting or slowing the needle at this point would assist the looper with respectively to hook yarn pick-up.

Please replace the paragraph that begins at line 4 on page 2 with the following amended paragraph:

Although intermittent feed of the primary backing material is possible with modern tufting machines, it is still possible, that the backing material movement will interferes with the needle stroke. This interference can result when ~~means~~ while the backing material moves while the needle is still in the backing material. This system interference causes stresses on the tufting machine, the tufting needle and carpet primary backing material. The stresses on the machine cause, for example, increased power usage and premature machine wear. The stress on the needle can cause needle breakage. The stresses on the carpet backing material cause distortion of the structure of the primary backing material which in turn can lead to problems with, for example, carpet dimensions. In the case where intermittent primary backing feed was used, the time available for backing material feeding is limited. In the case where continues continuous primary backing material feed was used, this stress is even more critical, and can cause severe damages or is the reason for low quality carpet production. In case of producing cut pile carpet the pick up of yarn off the needle after the needle has passed the BDC is done by a hook. Several yarn loops are collected on the hook and are cut by a knife to produce the cut pile carpet. Both motions, the hook motion and the

knife motion are of simple harmonic motion and being steadily sine-shaped.

Please replace the paragraph that begins at line 24 on page 3 with the following amended paragraph:

According to a broadest aspect of the invention there is provided a tufting machine in which the needle action and/or the action of the loopers, hooks and knives is a non-simple harmonic motion, that is a non-sinusoidal motion.

Please insert the following new paragraph after the last paragraph on page 4:

Figure 4 shows a tufting machine.

Please insert the following new paragraph in line 3 on page 5:

Referring now to Fig. 4, a tufting machine is indicated generally at 10. The method of the present invention pertains to the operation of the tufting machine 10 or any other needlebar tufting machine with a first needle bar 12 supporting needles, one of which is indicated at 13, and a second needlebar 14 supporting needles, one of which is indicated at 15, which needlebars are mounted, together, on a carriage 16 which is slidably supported on support rods 18 for lateral movement with respect to backing sheet material BSM. The carriage 16 is connected to a needlebar driver 20 which is operable to move the needlebars 12 and 14 and the needles 13 and 15, between a top dead center position (not shown) and a bottom dead center position (shown in Fig. 4). A looper assembly indicated at 22 is reciprocated by a driver 24 between a retracted position (shown in Fig. 4) and an extended position (not shown). The looper 22 comprises a plurality of knives, one of which is indicated at 26, and a plurality of hooks, one of which is indicated at 28. These looper elements are known but, according to the method of the present invention, the motion of the needlebars and the looper and/or knives and/or hooks are varied from the prior art to improve the operation of a tufting machine.

Please replace the paragraph that begins at line 27 on page 5 with the following amended paragraph:

In the case of double sliding needlebar tufting machines, an n-SHM needlebar action which slowed, or halted, with the needle at TDC could be used to ensure that the needles would not "tag" the backstitches without excess top stroke which would, in turn, result in tighter, more even backstitches. Furthermore, the use of an n-SHM needlebar action which is slowed, or halted, with the needle at the pick-up could be used to ensure good yarn pick-up without excess bottom stroke which would, in turn, result in a more even carpet surface.